

Case 3399***Dichochrysa* Yang, 1991 (Insecta, Neuroptera): proposed conservation by ruling that *Navasius eumorphus* Yang & Yang, 1990 is an available name**

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Abstract. The purpose of this application, under Articles 13, 67.2.1 and 67.8 of the Code, is to conserve the name *Dichochrysa* Yang, 1991 for a widespread and speciose genus of Old and New World green lacewings. The name *Dichochrysa* is a replacement name for *Navasius* Yang & Yang, 1990, which is a junior homonym of *Navasius* Esben-Petersen, 1936, but *Dichochrysa* is unavailable from its original publication because it is based on the unavailable specific name *Navasius eumorphus* Yang & Yang, 1990. It is proposed to conserve the name *Dichochrysa* by ruling that the name *Navasius eumorphus* is available from its publication by Yang & Yang (1990).

Keywords. Nomenclature; taxonomy; Neuroptera; CHRYSOPIDAE; *Navasius*; *Dichochrysa*; *Pseudomallada*; *Dichochrysa eumorpha*; green lacewings; antlions; Afrotropical; Nearctic; Oriental; Palaearctic.

1. Esben-Petersen (1936, p. 202) established the generic name *Navasius* (type species *Navasius elegantulus* Esben-Petersen, 1936 (p. 203), by original designation) for an African antlion (Insecta, Neuroptera, MYRMELEONTIDAE). *Navasius* Esben-Petersen, 1936 was regarded as a junior subjective synonym of *Bankisus* Navás, 1912 (p. 45) by Markl (1954, p. 221), and it has retained that taxonomic status to the present (see, for example, Stange, 2004, p. 77).

2. Yang & Yang (1990, p. 327) described a genus *Navasius*, in which they placed 15 named species of Chinese green lacewings (Insecta, Neuroptera, CHRYSOPIDAE). They explicitly designated (p. 327) '*Navasius eumorphus* (Yang & Yang)' as its type species. Yang & Yang (1990, p. 332) indicated that '*Navasius eumorphus*' was a new combination for *Mallada eumorphus* (the gender of *Mallada* Navás, 1925 is masculine, not feminine). The citation of a species *Mallada eumorphus* referred to a species that had been included for description in another manuscript submitted for publication prior to the submission of the work in which the name *Navasius* was established. However, publication of the work containing the intended original description of '*Mallada eumorphus*' was delayed, and the description of that species did not appear until 1999 (Yang et al., 1999, p. 120; in English, p. 160), where the name appeared as '*Dichochrysa eumorpha*'. Yang et al. (1999, p. 120; in English, p. 160) also designated a holotype for *Dichochrysa eumorpha*. Although the original work by Yang & Yang (1990) included several figures that were expressly attributed to '*Navasius eumorphus*' (p. 328, figs. 1a-h, 2a-d), that work contains no

‘... description or definition that states in words characters that are purported to differentiate ...’ this taxon, Article 13.1.1, nor does this name meet the criteria of Articles 13.1.2 or 13.1.3. Consequently, the name ‘*Navasius eumorphus*’ fails Article 13 and must be considered unavailable from its publication by Yang & Yang (1990). Furthermore, because only available names are eligible for fixation as type species, the genus-group name *Navasius* Yang & Yang, 1990 fails Article 67.2.1, which requires that the type species fixed in the original publication be cited by an available name. Consequently, although it appears to meet all other criteria for availability, the name *Navasius* must also be considered unavailable from its publication by Yang & Yang (1990).

3. Addressing the issue of the apparent homonymy between *Navasius* Esben-Petersen, 1936 and *Navasius* Yang & Yang, 1990 (and not recognising the actual unavailability of the latter name), Yang (1991) proposed the generic name *Dichochrysa* explicitly as a replacement name for *Navasius* Yang & Yang, 1990. However, because the type species of a replacement name is fixed automatically as the type species of the name it replaces (Article 67.8 of the Code), the name *Dichochrysa* was also effectively published without fixation of its type species in its original publication, and is thus also unavailable under Article 67.2.1. The name *Dichochrysa* Yang, 1991 also appears to meet all criteria of availability except that of type fixation in its original publication. Yang (1991, p. 150) cited the name of the type species of *Dichochrysa* as ‘*Dichochrysa eumorpha* (Yang & Yang 1990) comb. nov.’

4. Tsukaguchi (1995, p. 67) established the available generic name *Pseudomallada* (type species: *Chrysopa cognatella* Okamoto, 1914, by original designation) for seven species of Japanese green lacewings, but noted that many other species (not identified by name) belonging to this genus were also present in both the New and Old Worlds. *Pseudomallada* was treated as a junior subjective synonym of *Dichochrysa* by Brooks (1997, p. 268). Although this synonymy is nearly universally accepted in current usage, *Pseudomallada* is, in fact, the oldest available synonym for the generic concept denoted by the unavailable names *Navasius* Yang & Yang, 1990 and *Dichochrysa* Yang, 1991. This concept is, however, referred to under the name *Dichochrysa* Yang in almost all chrysopid literature published over the past 17 years (i.e. since the original proposal of the name *Dichochrysa* in 1991).

5. Recognition of the concept currently denoted by the name *Dichochrysa* filled an important void in the taxonomy of the CHRYSOPIDAE. In the few years that have elapsed since this concept was named, 154 valid species and three valid subspecies have been described in or transferred to (and currently reside in) the genus *Dichochrysa*. These include numerous species distributed throughout the Palaearctic (83 species), Ethiopian (56) and Oriental (21) faunal regions, and a smaller number of species found in the Nearctic (5) and northern Neotropical (2) regions. As currently circumscribed, *Dichochrysa* is the third most speciose genus in the family CHRYSOPIDAE and the sixth most speciose genus overall in the entire insect order Neuroptera. The permanent unavailability of *Dichochrysa*, and the validation of *Pseudomallada*, would significantly destabilise chrysopid nomenclature by requiring the creation of new combinations for approximately 140 species.

6. The name *Dichochrysa* has in a short time become deeply entrenched in the chrysopid literature, particularly the literature of the Palaearctic and Ethiopian

regions, where the majority of its species occur. Aspöck et al. (2001, pp. 93–107) recognised 32 species in the genus from the western Palaearctic. They listed ca. 85 uses of *Dichochrysa* combinations in the western Palaearctic literature during the five years from the name's first penetration into the European literature (ca. 1996) through ca. 2000 – and usage of the name has grown considerably since then. In the eastern Palaearctic, Yang (1997, pp. 78–86) recognised 42 species in *Dichochrysa* from China. All recent literature on these species in China has attributed them to *Dichochrysa*. Hölzel & Ohm (2002, pp. 126–127) recognised 51 species and two subspecies of *Dichochrysa* in the Afrotropical fauna, and it is now the most speciose chrysopid genus in that region. In contrast, the name *Pseudomallada* has remained little used – only 11 species-group names are presently known to have been combined with this generic name over the past 12 years, and each has few citations in the literature. A list of 112 references demonstrating the usage of the name *Dichochrysa* is held by the Secretariat.

7. Conservation of *Dichochrysa* can easily be effected under the plenary power by ruling that the name *Navasius eumorphus* is available from its publication by Yang & Yang (1990). This action would make *Navasius eumorphus* available for type fixation by the original designation of Yang & Yang and would render *Navasius* Yang & Yang, 1990 an available genus-group name – which would then fall as a junior homonym of *Navasius* Esben-Petersen, 1936. The replacement name *Dichochrysa* Yang would also become available with its original author and date (because a valid type fixation would then exist for the name that it was proposed to replace). Then, with the priority of *Dichochrysa* dating from 1991, it would predate its current subjective synonym *Pseudomallada*, published in 1995. *Pseudomallada* would also remain available with its own author and date for potential future use as a valid name under different generic concepts. Ruling *Navasius eumorphus* to be available from its original publication in 1990 would create essentially the same nomenclatural situation that would now prevail had *Mallada eumorphus* been made available prior to its publication as *Navasius eumorphus* by Yang & Yang (1990), as was the original intent of its authors. The requested ruling would preserve the current, nearly perfect stability of the names *Dichochrysa* Yang, 1991 and *Pseudomallada* Tsukaguchi, 1995 (a junior synonym of *Dichochrysa*).

8. Although not described in words by Yang & Yang (1990), the head, pretarsal claws, and male terminalia and genitalia of *Navasius eumorphus* were illustrated in that work, and the species involved is identifiable on the basis of those illustrations. The essential identity of the taxonomic concepts of *Navasius eumorphus* and the subsequently described *Dichochrysa eumorpha* is demonstrated by the publication of the identical figures 1a-h of Yang & Yang (1990, p. 328), under the name *Navasius eumorphus* as figures 20–36a-h of Yang et al. (1999, p. 120), under the name *Dichochrysa eumorpha*. Furthermore, '*Navasius eumorphus* Yang & Yang (1990)' is explicitly cited in synonymy under '*Dichochrysa eumorpha*, sp. nov.' by Yang et al. (1999, p. 120). These synonymical and figural links clearly tie the 1990 name *Navasius eumorphus* to the subsequent text description of *Dichochrysa eumorpha* found in Yang et al. (1999). While these taxonomic considerations have no direct bearing on the nomenclatural issues involved in this case, it seems pertinent to point out that the nomenclatural solution proposed here should not create any new taxonomic difficulties.

9. This proposal is submitted on behalf of the world neuropterological community with support from the following neuropterists: Stephen Brooks (*United Kingdom*), Charles Henry (*U.S.A.*), Vladimir Makarkin (*Russia*), Norman Penny (*U.S.A.*), Catherine Tauber (*U.S.A.*), and Shaun Winterton (*Australia*).

10. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that:
 - (a) the name *eumorphus* Yang & Yang 1990, as published in the binomen *Navasius eumorphus*, is available from its publication in that work;
 - (b) the lectotype of *Navasius eumorphus* Yang & Yang, 1990 is the specimen designated by Yang et al., 1999 as the holotype of *Dichochrysa eumorpha* sensu Yang et al., 1999;
- (2) to place on the Official List of Generic Names in Zoology the name *Dichochrysa* Yang, 1991 (gender: feminine), replacement name for *Navasius* Yang & Yang, 1990 (junior homonym of *Navasius* Esben-Petersen, 1936), type species *Navasius eumorphus* Yang & Yang, 1990, by original designation Yang & Yang, 1990 for the replaced generic name *Navasius* Yang & Yang, 1990;
- (3) to place on the Official List of Specific Names in Zoology the name *eumorphus* Yang & Yang, 1990, as published in the binomen *Navasius eumorphus*, and as defined by the lectotype designated in (1)(b) above, specific name of the type species of *Dichochrysa* Yang, 1991, the replacement name of *Navasius* Yang & Yang, 1990;
- (4) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the name *Navasius* Yang & Yang, 1990 (junior homonym of *Navasius* Esben-Petersen, 1936), type species by original designation *Navasius eumorphus* Yang & Yang, 1990.

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For more complete bibliographical and dating information, and for links to pdfs of some of the references cited above, see the cited reference numbers in the on-line Bibliography of the Neuropterida [BotN].

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